

SECTION 2 - SPECIAL TERMS AND CONDITIONS**2.1 PURPOSE**

The purpose of this solicitation is to establish a contract for the purchase of up to two (2), thirty foot (30'), front engine diesel trolley buses for Miami-Dade County (County) on behalf of the Department of Transportation and Public Works (DTPW). The quantity of buses actually purchased will be contingent upon the unit cost per bus and the total funds from the Federal Transit Administration programmed for this purchase.

2.2 TERM OF CONTRACT: TWELVE (12) MONTHS

This contract shall commence on the first calendar day of the month succeeding approval of the contract by the Board of County Commissioners, or designee, unless otherwise stipulated in the Purchase Order issued by the County's Internal Services Department, Procurement Management Division, and contingent upon the completion and submittal of all required bid documents. The contract shall expire on the last day of the twelve (12) month of the contract term, or until such time as all items purchased in conjunction with this solicitation have been delivered and accepted by the County's authorized representative and upon completion of the expressed and/or implied warranty periods.

2.3 METHOD OF AWARD: TO A SINGLE LOWEST PRICED VENDOR IN THE AGGREGATE

Award of this contract will be made to the responsive, responsible Bidder who submits an offer on all items listed in the solicitation's Price Submittal Form and whose offer represents the lowest price when all items are added in the aggregate, and meets the requirements listed below. If a Bidder fails to submit an offer on all items, its overall offer may be rejected. The County will award the total contract to a single vendor.

2.3.1 Motor Vehicle Dealer License

If applicable, in accordance with Chapter 320 of the Florida Statutes, SS320.27, Florida bidders submitting a bid in conjunction with this solicitation must be licensed by the state of Florida as motor vehicle dealers.

2.3.2 Disadvantage Business Enterprise (DBE)

Only those transit vehicle manufacturers listed on FTA's certified list (see link below) of Transit Vehicle Manufacturers, or that have submitted a goal methodology to FTA that has been approved or has not been disapproved, at the time of solicitation are eligible to bid.

See: <http://www.fta.dot.gov/civilrights/12891.html>

Bidders shall upload with their Bid Submittal a Transit Vehicle Manufacturer (TVM) certificate of compliance in Appendix A, in accordance with the requirements of 49 C.F.R Section 26.49, or upload documentation of having submitted a goal methodology to FTA that has been approved, or has not been disapproved.

2.3.3 Upload the completed Buy America Certificate in Appendix A. Also, see **Section 2, Paragraph 2.10.****2.3.4 Upload the completed Tech Information Questionnaire, Appendix B.**

2.3.5 Upload detailed floor plans with dimensions showing proposed seating arrangements, interior layout of the trolley and seat spacing between ambulatory seats.

2.3.6 Upload a copy of the Altoona Test Report prepared for the bus model being offered.

The County reserves the right to request any additional information during evaluation.

2.4 PRICES

Prices shall remain fixed and firm for the term of the contract.

2.5 EQUAL PRODUCT

Whenever a specific product name or part number is used within these specifications, the following statement applies "...or approved equal that meets or exceeds the salient characteristics, quality, and performance standards." If the phrase "or approved equal" is inadvertently omitted, it is implied after any brand name. All requests for additional information, clarifications, and approved equals should be submitted using WORD or EXCEL document, and e-mailed to the contact person of this solicitation for review by the due date and time for questions listed for this solicitation.

The County will review each request submitted for consideration as an approved equal. Upon completion of reviews, the County will issue addenda listing products deemed equal. Bidders shall propose either the product specified in Section 3 or those deemed as approved equal by the County via addenda. Failure to do so may result in your offer not being considered for award.

2.7 LIQUIDATED DAMAGES

In the event of delay in completion of the delivery of vehicles beyond the date specified, in addition to any granted extensions agreed to in writing by the County, liquidated damages in the amount of one hundred dollars \$100.00 per calendar day per vehicle (not to exceed \$1,000 per vehicle) will be assessed by the County. Delays by certain specified causes that are beyond the awarded Bidder's control (e.g., weather, strikes, and natural disasters) will not be assessed.

2.6 INSURANCE

Pending from Risk Management

2.7 SHIPPING TERMS: F.O.B. DESTINATION

All bidders shall quote prices based on F.O.B. Destination and shall hold title to the goods until such time as they are delivered to, and accepted by, an authorized County representative at:

Miami-Dade Transit
Metrobus Maintenance Administration
3295 NW 31 Street
Miami, Florida 33142

2.8 DELIVERY REQUIREMENTS

2.8.1 Upon delivery the awarded Bidder shall produce the following documents:

a. Manufacturer's statement of origin made out to Miami-Dade County, Florida, 2225 N.W. 72 Avenue, Miami, Florida 33122.

b. Warranty Certifications.

All documents mentioned above are to be delivered to or hand carried to the General Superintendent of Bus Maintenance or designee, 3300 N.W. 32nd Street, Miami, Florida 33142.

2.8.2 Assumption of Risk of Loss: Miami-Dade Transit (DTPW) shall assume risk of loss of the bus upon delivery. Prior to this delivery the awarded Bidder shall have risk of loss of the bus, including any damages sustained during delivery. If the common carrier drive away delivery method is used, drivers shall keep a maintenance log in route and it shall be delivered to DTPW with the bus.

2.8.3 The awarded Bidder shall deliver buses within 270 days after receiving the County's notice to proceed, unless an extension is granted by the County.

2.9 **ACCEPTANCE PROCEDURE**

2.9.1 Final Acceptance of Buses per Unit

Delivery of a bus to Miami-Dade County does not constitute Final Acceptance for the purpose of payment. Final Acceptance will be given by signed notification from the County's Project Manager or designee, and shall be given only after a thorough inspection by DTPW. The inspection must demonstrate that the bus meets contract specifications and conditions and that the engineering, materials, and workmanship exhibit a level of quality and performance consistent with or exceeding industry standards. DTPW will conduct Acceptance tests on the delivered bus. These tests may be completed within fifteen (15) working days after bus delivery. DTPW will notify the awarded Bidder in writing of acceptance or non-acceptance. Final Acceptance may occur earlier if DTPW notifies the awarded Bidder in writing of early acceptance or places the bus in revenue service. If the bus fails these tests, it shall not pass Final Acceptance until the repair procedures defined below have been carried out and the bus retested until it passes.

2.9.2 Repairs after Non-acceptance

DTPW will provide a written notice of non-acceptance to the awarded Bidder. The notice will include repairs to be completed.

2.9.3 Repairs by awarded Bidder

The awarded Bidder shall begin work within five (5) working days after receiving written notification from DTPW of failure of acceptance tests. DTPW will make the bus available to complete repairs timely with the awarded Bidder repair schedule.

2.9.4 The awarded Bidder shall provide, at its own expense, all spare parts, tools, and space required to complete the repairs. At DTPW's option, the awarded Bidder may be required to remove the bus from DTPW's property while repairs are being done. If the bus is removed from DTPW's property, repair procedures must be diligently pursued by the awarded Bidder, and the awarded Bidder shall assume risk of loss while the bus is under its control. The awarded Bidder shall provide a written statement to DTPW verifying the assumption of the risk of loss.

- 2.9.5 Final Acceptance includes successful completion of Buy America post-delivery audit in Section 2, paragraph 2.10.

2.10 BUY AMERICA REQUIREMENTS

The certificate titled "Buy America Certification" must be completed and uploaded with the bid submittal. This certificate is provided herein as page 3 of Appendix A. Also see Section 1, Paragraph 1.55.

2.10.1 PRE-AWARD AND POST DELIVERY REQUIREMENTS

Compliance with the requirements of 49 U.S.C. § 5323(m) and FTA regulations, "Pre-Award and Post-Delivery Audits of Rolling Stock Purchases," 49 C.F.R. Part 663 and any amendments thereto is required.

2.10.2 PRE-AWARD AND POST-DELIVERY AUDITS

The Contractor (awarded Bidder) agrees to comply with 49 USC § 5323(l) and FTA's implementing regulation at 49 CFR Part 663 and to submit the following certifications:

1. Buy America requirements: The Contractor shall complete and submit a declaration certifying either compliance or noncompliance with Buy America (see Appendix A). If the recommended Bidder/Proposer certifies compliance with Buy America, it shall submit documentation that lists (1) component and subcomponent parts of the rolling stock to be purchased identified by manufacturer of the parts, their country of origin and costs; and (2) the location of the final assembly point for the rolling stock, including a description of the activities that will take place at the final assembly point and the cost of final assembly.
2. Solicitation specification requirements: The Contractor shall submit evidence that it will be capable of meeting the bid specifications.
3. Federal Motor Vehicle Safety Standards (FMVSS): The Contractor shall submit (1) manufacturer's FMVSS self-certification, Federal Motor Vehicle Safety Standards, that the vehicle complies with relevant FMVSS or (2) manufacturer's certified statement that the contracted buses will not be subject to FMVSS regulations.

2.11 BUS TESTING

The awarded Bidder (or the Manufacturer of the bus) agrees to comply with 49 U.S.C. A 5323(c) and FTA's implementing regulation at 49 CFR Part 665 and shall perform the following:

- 2.11.1 A manufacturer of a new bus model or a bus produced with a major change in configuration shall provide a copy of the final test report to the recipient at a point in the procurement process specified by the recipient which will be prior to the recipient's final acceptance of the first vehicle.
- 2.11.2 A manufacturer who releases a report under paragraph 1 above shall provide notice to the operator of the testing facility that the report is available to the public.
- 2.11.3 If the manufacturer represents that the vehicle was previously tested, the vehicle being sold should have the identical configuration and major components as the vehicle in the test report, which must

be provided to the recipient prior to recipient's final acceptance of the first vehicle. If the configuration or components are not identical, the manufacturer shall provide a description of the change and the manufacturer's basis for concluding that it is not a major change requiring additional testing.

2.11.4 If the manufacturer represents that the vehicle is "grandfathered" (has been used in mass transit service in the United States before October 1, 1988, and is currently being produced without a major change in configuration or components), the manufacturer shall provide the name and address of the recipient of such a vehicle and the details of that vehicle's configuration and major components.

2.11.5 The trolley model offered must be tested to a minimum service life category of 10 years, 350,000 miles.

2.11.6 Bidders must submit a Certification of Compliance with FTA's Bus Testing Requirements (see Appendix A) and a copy of the Altoona Bus Test Report with their Bid.

2.12 EQUIPMENT CHANGES

The County may make changes to the buses supplied during the contract term, before or after delivery and acceptance of the buses ordered, provided that 1) the net amount of any such changes does not represent a Cardinal Change as described the FTA, and 2) such changes and net amount are mutually agreed in writing between the awarded Bidder and the County.

2.13 COMPLIANCE WITH FEDERAL REGULATIONS DUE TO USE OF FEDERAL FUNDING

Since the goods, services, and/or equipment that will be acquired under this solicitation will be purchased, in part or in whole, with federal funding, it is hereby agreed and understood that Section 60-250.4, Section 60-250.5 and Section 60-741.4 of Title 41 of the United States Code, which addresses Affirmative Action requirements for disabled workers, is incorporated into this solicitation and resultant contract by reference.

2.14 COMPLIANCE WITH FEDERAL STANDARDS

All items to be purchased under this contract shall be in accordance with all governmental standards, to include, but not be limited to, those issued by the Occupational Safety and Health Administration (OSHA), the National Institute of Occupational Safety Hazards (NIOSH), and the National Fire Protection Association (NFPA).

2.15 COST OR PRICE ANALYSIS

The awarded Bidder is required to cooperate with the County as necessary for the County to conduct any cost or price analysis as required by local, state, or federal law, regulation, policy, or any other requirements.

2.16 BUS COMPLIANCE WITH ADA

Buses to be purchased under this contract shall comply with the accessibility requirements of DOT regulations, "Transportation Services for Individuals with Disabilities (ADA)," 49 CFR Part 37, and Joint ATBCB/DOT regulations, "Americans with Disabilities (ADA) Accessibility Specifications for Transportation

Vehicles," 36 CFR Part 1192 and 49 CFR Part 38. The Bidder shall submit a certification with the Bid Submittal that the buses will comply with the ADA requirements. See Appendix A.

2.17 SITE INSPECTION AND EVALUATION

The County reserves the right to inspect the manufacturers facilities including sales, engineering, fabrication, manufacturing, parts, the resident inspector's facilities and production change order (PCO) process prior to award.

2.18 OMISSIONS

Notwithstanding the provision of drawings, technical specifications, or other data by MDC, the Contractor shall have the responsibility of supplying all details required to make an accurate proposal of services offered even though such details may not be specifically mentioned in the specifications.

2.19 PRIORITY

In the event of any discrepancies or conflicts between the description of the item(s) and/or service(s) proposed on Section 3, Technical Specifications, and other parts of this document, the Technical specifications shall govern.

2.20 MATERIAL SAFETY DATA SHEET

In compliance with Florida Law, the contractor must submit any required Material Safety Data Sheets on hazardous chemicals or substances supplied to DTPW. These sheets shall be provided upon delivery.

2.21 ACCESS REQUIREMENTS FOR INDIVIDUALS WITH DISABILITIES:

The Contractor agrees to comply with and assure that any sub-recipient, or third party contractor under this Project complies with all applicable requirements of the Americans with Disabilities Act of 1990 (ADA), 42 U.S.C. § 12101 et seq.; section 504 of the Rehabilitation Act of 1973, as amended 29 U.S.C. § 794; the transit assistance laws codified at 49 U.S.C. § 5301, et seq.; and the following regulations and any amendments thereto:

(1) U.S. DOT regulations. "Nondiscrimination on the Basis of Handicap in Programs and Activities Receiving or Benefiting from Federal Financial Assistance," 49 C.F.R. Part 27.

(2) Department of Justice (DOJ) regulations. "Nondiscrimination on the Basis of Disability in State and Local Government Services." 28 C.F.R. Part 35;

(3) DOJ regulations. "Nondiscrimination on the Basis of Disability by Public accommodations and in Commercial Facilities." 28 C.F.R. Part 36;

(4) Equal Employment Opportunity Commission, (EEOC) regulations. "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act." 29 C.F.R. Part 1630;

(5) No grant may be used to support a procurement that uses an exclusionary or discriminatory specification. 49 USC 5323 (h).

SECTION 3 – TECHNICAL SPECIFICATIONS

3.1 SCOPE

These technical specifications provide a general description and define the requirements for furnishing up to two (2) thirty foot (30') trolleys for use in transit service. The trolleys are to be durable, heavy duty construction with an expected service life of 10 years, 350,000 miles.

3.2 VEHICLE DESCRIPTION

The trolleys shall be new, current year production diesel powered, front engine, air-conditioned, 30' trolleys.

The trolleys shall meet all applicable Federal, State, and local requirements.

The trolley shall be capable of satisfactory operation, with the total weight of the vehicle plus 100 percent passenger capacity.

The trolley shall be provided with all features for the utmost safety and ease of operation for the driver and shall be maneuverable under all highway and street conditions.

The design of the trolley shall reflect the highest standards of concern for the welfare and safety of the elderly and persons with disabilities. The trolley shall be equipped with a wheelchair lift and have two (2) wheelchair securement locations.

The trolley shall have a standard front entrance door and a rear access door capable of accommodating either in-vehicle or under-floor wheelchair lifts.

Whenever a specific trade or product name is used within this specification, the following statement applies "...or approved equal with the same standards of quality, design and performance." All requests for approved equals must be submitted to MDC for review.

3.3 CONFORMITY

The trolley shall be built and constructed with the finest quality materials and workmanship obtainable. The design, including the body and chassis, shall be constructed for transit application.

The trolley shall be constructed as a fully functional vehicle and shall be ready for service at time of delivery.

The contractor shall comply with the most current versions of all applicable Federal, State, and local regulations. These shall include, but not be limited to, Americans with Disabilities Act (ADA), Federal Motor Vehicle Safety Standards (FMVSS), and Florida Department of Transportation (FDOT) Rule 14-90.007.

All parts or features not specified will be the manufacturer's standard design.

All parts and components shall be as specified unless a substitution is granted by the purchaser.

The manufacturer and specific component suppliers shall assume responsibility for the proper installation and warranty of all components.

3.4 REPLICA TROLLEY CAR DESIGN

Shapes, proportions, etc. shall be adhered to as per the agreed design.

The aesthetic design related to these specifications shall be adhered to and incorporate all features as shown in these specifications, unless an acknowledged substitution is approved.

3.5 MANUFACTURER'S CERTIFICATION

The manufacturer shall certify that the trolley offered has been designed, manufactured, assembled, and tested for its intended use and will be fully functional. The trolley body manufacturer and the chassis manufacturer shall be ISO 9000 & 9001 certified or other form of proof for a formal Quality Assurance manufacturing process in place.

3.6 MATERIALS

All materials used in the construction of the trolley shall be of first quality and shall conform to S.A.E. standards as applicable.

All lumber used in the construction of the trolley shall be of first quality and free from any finish or structural defects.

Painted galvaneal sheets shall be thoroughly cleaned, etched, and coated, as specified.

All joints shall be protected by the application of paintable industrial elastomeric adhesive sealant compound at the time of assembly.

Bolts and screws shall be zinc or cadmium plated.

3.7 WORKMANSHIP

Workmanship shall be of best quality and conform to all standards and practices associated with the transit bus manufacturing industry.

Welding procedures shall meet all American Welding Society standards. All exposed welds shall be ground smooth and shall have a smooth appearance before the application of any paint or primer.

All rivets shall completely fill the hole. All bolts passing through wood shall be cadmium or zinc plated. All wood flooring shall be filled, sealed, and thoroughly finished prior to installation of flooring material.

All galvanneal body parts shall be thoroughly cleaned, mechanically abraded and then first-coated with etching primer, or an approved equal. Excess joint sealer shall be removed prior to the priming process. External joints shall be sealed with butyl type sealant or equal. All cracks, crevices, and pockets shall be sealed to prevent intrusion of moisture and the elements.

Exterior light fixtures shall be fitted to the outside of the trolley body and shall be adequately sealed to prevent the entrance of water.

All burrs and sharp edges shall be ground to eliminate any rough edges.

Grinding of any roof or body panels shall be kept at a minimum and allowed only to present a smooth finish.

All painted surfaces shall be void of sanding or grinding marks.

3.8 TESTING

The complete trolley shall be tested and approved as to the operating condition of all components.

Water test of the completed trolley shall follow an established inspection test process approved by MDC. A detailed water test procedure shall be submitted to MDC for review and approval with the bid submittal.

Trolley shall be Altoona tested to a minimum service life category of 10 years, 350,000 miles. A copy of the Altoona test summary is required with the proposed technical submittals.

All vehicles shall be weighed "as built" before release. A copy of the "as built" weight certification shall be on each vehicle shipped to MDC.

3.9 CHASSIS ASSEMBLY SPECIFICATIONS

3.9.1 CHASSIS FRAME ASSEMBLY

The frame shall be constructed of steel non-welded channel with riveted cross members.

The chassis shall be treated to resist corrosion. The frame shall be coated with primer and painted with enamel paint.

Rear Tow Hooks shall be provided.

Provisions for towing the trolley from the front shall be provided.

3.10 SUSPENSION

Rear suspension shall be the chassis manufacturer's standard air ride suspension. The suspension system shall be adequate for operation of the trolley fully loaded with maximum seated and standing passengers, operator, and full fluid tanks. The suspension shall have heavy-duty shock absorbers and sway bar.

3.11 AXLES

The axles shall be the chassis manufacturer's standard axles for the application.

A front end alignment shall be performed on the vehicle prior to delivery.

3.12 BRAKES

The braking system shall be the chassis manufacturer's air brake system with a Bendix or approved equal air dryer.

Front and rear disc brakes shall be provided if available.

The parking brake shall have a dash mounted control.

The braking system shall meet FMVSS-121 standards.

3.13 WHEELS AND TIRES

All wheels shall be ventilated 19.5" aluminum hub piloted.

Tires shall be 245/70R 19.5, 14 ply, radials.

The front and rear tires shall be interchangeable with a single tire configuration in the front and dual in the rear.

A spare tire mounted on 19.5" aluminum rim shall be provided with each trolley.

3.14 STEERING SYSTEM

A tilt and telescoping steering wheel shall be provided with an 18" steering wheel.

A center horn button and column mounted turn signal switch shall be provided.

The steering system shall be the chassis manufacturer's standard power steering.

The steering fluid reservoir shall be easily accessible. The steering hydraulic pump shall be gear driven off the engine.

3.15 ENGINE

The engine shall be a diesel compliant with current EPA emissions requirements. The engine shall produce 240 horsepower at 2,400 RPM and 560 pounds/foot torque at 1,600 RPM. The engine shall be located in the front of the vehicle.

The engine shall be equipped with a programmable cruise and fast idle feature utilizing a column mounted controls.

The engine ECM shall be programmed so the high idle cannot be engaged unless the vehicle is at a complete stop with the transmission in neutral and/or the parking brake set.

The ECM shall use the speed signal from the transmission to determine vehicle road speed.

The ECM shall be programmed to shut down the engine when the vehicle is at idle for 15 minutes.

The engine shall meet all applicable Federal and State emission standards.

A 13 gallon minimum Urea Tank to meet 2013 EPA Engine standards.

3.16 ENGINE BLOCK HEATER

No engine block heater shall be provided.

3.17 ENGINE OILING SYSTEM

The engine shall be equipped with one full-flow spin-on oil filter, with a one quart capacity and an internal bypass valve.

The engine oil pan shall be equipped with a hex head magnetic drain plug.

The oil filler tube shall project to the front cap access door for ease of filling.

3.18 FUEL SYSTEM

The fuel tank shall be a net 90 gallon capacity mounted between the rear frame rails. The fill rate shall be a minimum of 20 GPM. The fuel tank shall meet all FHWA requirements and have an easily accessible FHWA information plate attached.

The fuel system shall be compatible with biodiesel B20. Fuel lines in the engine compartment shall be properly sized and rated. Fuel lines shall be properly routed and supported to prevent chafing.

The vehicle must be delivered with a minimum $\frac{1}{2}$ tank of fuel.

3.19 COOLING SYSTEM

The cooling system shall be of sufficient size and design to maintain all engine and transmission fluids and engine air intake at safe continuous operating temperatures in accordance with engine and transmission manufacturer's cooling system requirements during the most severe operating conditions found in South Florida climate. The cooling system shall have an ambient capacity of at least 120 degrees Fahrenheit at sea level operation utilizing water and ethylene glycol 50/50. The coolant shall protect the cooling system to minus 35 degrees Fahrenheit.

The radiator shall be a heavy-duty down-flow type, front mounted. Bottom tank shall be equipped with a drain cock. The radiator shall be mounted on rubber isolators.

The transmission oil cooler shall be an in-tank, water-to-oil type.

The charge air cooler shall be a cross-flow type.

The engine shall be equipped with a viscous fan drive. The fan shroud shall be of one-piece design.

All radiator hoses shall be of heavy-duty reinforced EPDM rubber.

3.20 ENGINE ELECTRONIC PROTECTION SYSTEM

An electronic engine integral warning & de-rate protection system shall be supplied. The system shall activate in the event of low oil pressure or high coolant temperature.

The system shall de-rate the engine torque and/or speed to a safe condition. The system shall warn the driver with a light when coolant temperature reaches 220 degrees Fahrenheit. De-rating of the engine shall be variable condition. Maximum de-rate shall be 60 percent before engine shut-down.

3.21 ACCESSORY DRIVES

The factory installed power steering pump and air compressor shall be gear driven off of the engine.

The factory installed alternator, water pump, and air conditioning compressors shall be belt driven off the engine.

3.22 AIR CLEANER SYSTEM

The air cleaner shall be a single stage dry type with a high grade water-proof cellulose filter element and housing. The 10 micron filter element shall be disposable.

The air cleaner shall be mounted and accessible from the front of the vehicle.

3.23 EXHAUST SYSTEM

The exhaust system shall be securely supported and mounted on rubber isolators.

The muffler shall be properly shielded and be routed away from rubber air springs where applicable.

A 4-inch aluminized tail pipe shall be provided.

The exhaust system shall terminate at the left rear of the vehicle and be equipped with the exhaust tip to direct fumes downward from the trolley.

The system shall meet Federal and State regulations.

3.24 ELECTRICAL SYSTEM

The alternator shall be able to produce enough electrical output to handle the electrical demands of the vehicle without drawing current from the batteries when the engine is at idle, with all accessories including A/C, interior and exterior lights on.

The 12-volt system shall be served by a single Leece-Neville 4884 270 amp alternator, air-cooled and belt driven off the engine.

The battery system shall be designed for four (4) Group 31 batteries.

A pull-out sliding battery tray constructed of Stainless Steel shall be provided with a positive locking mechanism to keep the tray in the closed position.

The battery compartment shall be designed to prevent accumulation of debris on top of the batteries and shall be vented and self-draining. The battery compartment shall be accessible only from the exterior.

The starter motor shall be a 12-volt DC motor operated by a key switch located on the driver's console.

All trolleys provided under these specifications shall have ignition switches keyed alike.

3.25 ACCELERATOR CONTROL AND CRUISE/FAST IDLE SYSTEM

The accelerator control system shall be electronic floor mounted pedal.

The fast idle shall be driver controlled and shall operate when the transmission is in neutral or the parking brake is set.

3.26 TRANSMISSION

The transmission shall be fully automatic, 5-speed with park position.

The oil pan on the transmission shall be equipped with a hex head magnetic type drain plug. The transmission shall be equipped with a heat exchanger located in the bottom of the radiator.

An external spin-on filter shall be provided.

3.27 TRANSMISSION CONTROLS

The transmission shall be controlled by a shifter located to the right of the driver on the dash console.

The transmission shall include a shifter positive interlock. The interlock shall prevent the transmission from going into gear with the trolley door open.

An interlock shall prevent engagement of starter in any gear position other than neutral or park.

3.28 DRIVE-LINE ASSEMBLY

Protective guard straps properly designed for a front engine application shall be provided.

3.29 FLEXIBLE LINES (HOSES)

All flexible lines in the engine compartment (water, fuel, and oil) shall use zinc plated steel or stainless steel crimp-on or reusable fittings.

3.30 BODY ASSEMBLY SPECIFICATIONS

3.30.1 PRINCIPAL DIMENSIONS

Length Overall - excluding cowcatcher 30' Nominal

Body Width, Excluding Mirrors 98" Nominal

Height, Overall	134" Maximum
Inside Headroom over aisle	78" Minimum
Gross Vehicle Weight Rating	26,000 lbs. Maximum
Wheelbase	208" Maximum
Rear Body Overhang	118" Maximum
First step height	13" Nominal
Step Risers	8.25" Nominal
Floor height	38" Maximum
Aisle width	21.5" Nominal
Clear Door Opening	32"x 91" Nominal

3.31 **CONSTRUCTION**

The body shall be electrically welded, using MIG-type welding methods. The body and chassis will act together as a totally integrated assembly.

All frame members shall be steel tubing, structural channel, or I-beam.

3.32 **BODY FRAMING**

The crossmembers shall consist of steel I-beams, welded to fabricated steel plate mounting brackets. Floor framing shall interlock with the sidewalls to form an integral structure and will transmit body loads to the floor and chassis assembly.

A steel sub-floor shall be welded to longitudinally run sills. The sills shall be bolted to rubber isolator mounting cushions bolted into frame rail support brackets. The support brackets shall be bolted to the chassis frame.

Front, rear, and roadside wall structures will be fabricated using rectangular and square tubing.

Roof framing will be made of rectangular tubing and will transmit loads to the walls. The roof design will depict the vintage trolley theme. The cupola roof section will have an overhang on the perimeter.

3.33 **WHEELHOUSINGS AND STEPWELLS**

Rear wheel housings shall be constructed of 14-gauge stainless steel, attached to the floor structure and coated with a minimum of 1/8" thick emulsion type undercoating.

Step wells shall be fabricated of 14-gauge galvaneal steel and undercoated to a minimum of 1/8" thickness to eliminate sound transmission to the interior.

3.34 FLOOR

The finished sub floor shall be 3/4" thick light weight and water resistant synthetic space age flooring or fiberglass reinforced plywood (FRP). The sub floor panels shall be installed on the top of the steel sub frame with floor bolts. Construction adhesive shall be utilized as well along the top of all floor members that intersect the floor decking material as an additional securement method.

Floor covering shall be 1/8" thick, transit type vinyl floor with non-slip material in the entry way and the aisle, or Transit Floor, 1/8" thick, transit type smooth rubber with 3/16" ribbed rubber in the entry way and the aisle. If rubber transit floor is provided, flooring under the seats shall be 1/8" smooth rubber. Floor covering color will be selected at the preproduction meeting.

Entry steps shall have a white step nosing covering the leading edge of the step riser.

The driver's area and engine platform area floor shall be protected from engine noise by a sound deadening and heat insulating floor mat with good slip resistance and wear characteristics.

3.35 PANEL SECTIONS - EXTERIOR

The front and rear sections of the trolley shall be constructed similar to that of the sidewall. galvaneal skin of 20 gauge thickness shall be attached to the steel frame using zinc coated structural mono-bolt rivets.

The front wall shall have an angled configuration and shall incorporate headlight assemblies and three (3) individual windshield glass pieces. The three sections of the front cap will have doors for access to the front end of the trolley.

Exterior side wall panels shall be 18 gauge thickness from the window line to the bottom of the sidewall and 20 gauge to the roof line and attached to using zinc coated structural mono-bolt rivets. The sidewalls shall be straight without any curvature.

The rear of the trolley shall be constructed with the same angled configuration as the front of the trolley. The rear of the trolley shall be designed with three (3) trolley windows, one left, one center, and one right. The rear section of the trolley shall be constructed similar to that of the sidewall. galvaneal skin of 20 gauge thickness shall be riveted to the steel frame using structural mono-bolt rivets.

The roof shall consist of a one-piece 3/16-inch thick molded fiberglass cap or welded 1/4" thickness aluminum roof, secured to the steel roof frame-work. The roof shall be designed with curvature depicting the original lantern roof design (cupola) of the late 1800's trolley cars.

The front and rear roof caps shall be incorporated into the entire roof cap assembly and shall form a contoured curvature from side to side and front to rear.

All side panels shall be thoroughly cleaned and treated prior to application of etching primer. All panel joints shall be protected by the application of paintable, elastomeric adhesive sealant compound at the time of assembly.

3.36 INSULATION AND UNDERCOATING

The entire roof, cupola portion of the roof, road, curbside and rear walls shall be insulated. This reflective insulation shall consist of two layers of aluminum foil laminated to the outside of two layers of heavy-duty polyethylene air-bubble cushioning. The insulation shall be impervious to moisture and air currents and shall not deteriorate from heat, water, vibration or age.

The entire underside of the trolley body, including wheel housings and stepwells shall be sealed with an application of 1/8" thick emulsion type undercoating. Care shall be taken to not coat any part of the exhaust system.

The entire metal structure shall be thoroughly cleaned and treated with etching type primer. Frame sections below the floor line shall be treated on the interior with a anti-corrosion cavity coating spray on material.

3.37 PANEL SECTIONS - INTERIOR

All interior side panels shall be .250" oak veneer panels.

Ceiling panels shall also be .250" oak veneer panels, trimmed with oak molding strips.

Perimeter edges of the ceiling and walls shall also be trimmed with oak molding.

Panel sections below the windows shall be .125" oak veneer or commercial grade carpet.

3.38 BUMPERS

Standard rear bumper shall be 6 inches high and shall have an angled configuration to match the shape of the rear cap.

Standard front bumper shall include a heavy-duty "cowcatcher" constructed of heavy gauge sheet metal and expanded metal.

The bumpers shall be finished in black e-coat or black bed liner type material with a textured finish.

3.39 COWCATCHER

The cowcatcher shall be an integral part of the front bumper and shall extend from the front of the vehicle.

The cowcatcher shall have the same angled contour from side to side as the front cap and shall be mounted flush with the edges of the body.

The cowcatcher shall be made from 10-gauge sheet metal and 10-gauge expanded metal, with a clear opening size of $\frac{3}{4}$ " x 1- $\frac{1}{2}$ ". Screen shall be attached to the back-side of the cowcatcher.

The cowcatcher shall be finished in black e-coat or black bed liner type material with a textured finish.

Bike Rack

A black bike rack shall be mounted on the cowcatcher.

3.40 STEP TREADS

Step treads shall be bonded directly to the steel step well and mechanically fastened. All step edges, thresholds, and border edges of ramps or lifts shall have contrasting color bands running the full width of the edge.

The step assemblies shall be covered with non-slip vinyl or ribbed rubber step treads with white nosing.

3.41 WINDOWS AND WINDSHIELDS

Window frames shall be made from high-strength aluminum extrusions and assembled with the highest quality hardware.

Windows shall be glazed with safety glass that is free of distortions. Side and rear windows shall be cushioned with vinyl channels. All windows shall have drain holes and weather seals and shall be manufactured and installed to meet FMVSS Standards 205 and 217.

The front windows on the street-side and curb-side of the trolley shall be single-density safety glass in fixed, non-opening frames. The window directly adjacent to the driver shall be standard design with a bottom T-slider.

Glazing material for the driver's area windows shall be 1/8" tempered safety glass with a rating of AS-2.

The passenger compartment windows on the street and curbside shall be standard design windows with round top vintage appearance. Windows shall be trolley solid pane non-opening. Windows shall be glazed with 1/8" tempered safety glass with 31 percent tint and a rating of AS-3.

The rear of the trolley shall have one (1) emergency window in the center and two (2) fixed windows at the right and left of the rear section.

Emergency windows shall be vertically hinged. Two (2) egress windows shall be provided on the street-side and one (1) shall be provided on the curbside and in the rear of the trolley. Windows shall meet FMVSS 217 safety standards. Egress windows shall be designed to be opened in an emergency situation by releasing clearly marked red latches located on the side of the window. The window shall be designed to swing open towards the front of the vehicle. There shall be operating instructions located on each egress window, and shall be clearly marked as emergency exits per FMVSS safety standards.

The cupola (lantern) section of the roof shall be glazed with fixed light window assemblies in black aluminum frames (clamp style). These windows shall be tinted and have simulated etching appliques. Glass shall have a 31 percent tint and a rating of AS-3.

Streetcar windshields shall be three (3) pieces, glazed with 1/4" laminated, single-density safety glass (AS-1) and set in rubber lace-sealed weather-strip. Windshields shall meet FMVSS safety standard 205.

3.42 SUN VISORS

Adjustable sun visors shall be provided for the driver's side and co-pilot window and windshields.

Visors shall be made of tinted acrylic material.

A roller sun visor shall be provided for the driver's side window.

3.43 ENTRANCE DOOR

The front entrance door shall consist of a two piece electrically operated bi-fold or push out door assembly. The door shall fold or push outward providing a minimum clear opening of 32-inches.

Door leaves shall have solid pane tempered glass windows.

The overhead electric door assembly shall be installed in the entry door frame with two steel pins, one located at the top and bottom of the door frame that creates the pivot points for the panels. The pins shall be lubricated with standard grease fitting bearings that are located in the door header. The double out door opening and closing shall be controlled by a self-aligning control rod with an adjustment spring.

The door shall be operated by a heavy-duty push button switch located on the driver's control panel. The door operator assembly is to be installed in a sealed compartment over the door panels.

The leading edge of each door panel shall be protected by an extruded rubber safety edge. A clearly marked red safety release lever shall be provided to disengage the door actuator in case of emergency.

3.44 WHEELCHAIR LIFT/DOOR

An electric wheelchair lift shall be provided to mount either inside or under the vehicle.

A full ADA-approved interlock system shall also be provided.

The wheelchair lift shall conform to ADA standards and be legibly and permanently marked by the manufacturer or installer with the following information:

1. The manufacturer's name and address.
2. The month and year of manufacture.
3. A certificate that the wheelchair lift or ramp securement devices, and their installation, conform to State of Florida requirements applicable to accessible buses. A placard shall be mounted adjacent to the wheelchair lift that says the "Lift installation meets State of Florida minimum requirements."

An accessible door for the lift shall be provided behind the rear axle. Door shall include a three (3) point latch mechanism and trolley style window.

An emergency light and buzzer in the switch console shall alert the driver when the wheelchair door is ajar.

3.45 WHEELCHAIR SECUREMENT DEVICES

Two (2) forward facing mobility-aid securement locations shall be provided for the trolley.

Securement spaces shall have a clear floor area of 30" x 48" per ADA requirements. The securement area will have fold-down/up seats to accommodate passengers when a wheelchair or mobility-aid is not occupying the area.

The securements shall restrain a longitudinal force of up to 2,500 pounds per securement and a minimum of 5,000 pounds for each mobility aid.

Each wheelchair / mobility-aid securement device shall be provided with a seat belt and shoulder harness.

The wheelchair securement system shall not have recessed floor pockets.

Option

A fully automatic, self-locking and self-tensioning retractable wheelchair securement system with knobless low profile retractor shall be provided at both wheelchair securement locations as an option.

3.46 PRIORITY SEATING SIGNS

Priority seating signs shall be provided at each wheelchair location and at the first forward facing seats on each side of the trolley.

Characters on these signs will be per ADA provisions.

3.47 FRONT GRILLE

The front grille shall incorporate 14-gauge perforated steel with a 3/8" diamond or open round pattern.

The grille shall be coated with gloss black enamel.

The grille shall be an integral part of the center access door.

3.48 ELECTRICAL SYSTEM

PMC-Programmable Multiplex Control:

Modular system shall be configured from ten input/output channels to as many as 320 input/output channels with Windows programmable logic control, high amperage (10 to 20 amp) solid-state or relay outputs, unlimited number of pushbutton or rocker switch operator controls, and 160 built-in timers for on delay, off delay or flashers.

Communication bus shall use common 14 or 16 gauge wire. Shields or twisted pairs shall not be required.

Multiplex signal shall be resistant to interference from electrical noise, etc.

High amperage outputs shall have built-in distribution and circuit protection
Special purpose modules shall be available as required.

A Programmable Multiplex Control (PMC) communications and switching system shall be provided for use on the vehicles. Its implementation shall allow it to be easily used for most signaling and switching functions on the vehicle. The system shall be completely water resistant.

PMC shall use a Windows based program for setup. All the relationships between inputs and outputs shall be changeable. A computer connected into the PMC CPU shall be all that is required to modify the setup. If a new switch or load is added, the entire harness shall not need to be changed. Connection of the device to the nearest available output module and a change in the program setup shall be all that is required.

3.49 EXTERIOR LIGHTING

All exterior lighting shall be 12-volt DC and be installed in compliance with motor carrier safety regulations and FMVSS Standard 108.

Exterior lights shall be LED if available.

Headlights shall be single-high/low, round assemblies with brass plated beauty rings.

Side clearance lights shall be installed on the outside edge of the roof cap.

Front directional lights shall be mounted above the cowcatcher. Side directional lights shall be provided with brass plated armored guards.

The rear stop, tail, and directional lights shall be mounted above the bumper.

Tail lights – Stop/Backup/Turn shall be 4" round Red/White/Red all LED.

Turn signals – Side mount (mid-body) shall be all LED.

The front doorway shall be provided with lights conforming to ADA.

A license plate bracket with light shall be located on the rear of the trolley.

3.50 INTERIOR LIGHTING

Interior lights shall be LED if available.

The interior lights shall consist of six (6) 12 volt, 40 watt minimum, globe style lights with brass bases. The dome lights shall be installed above the center aisle, evenly spaced along the cupola ceiling to provide lighting for safe passenger movement. The lighting shall be activated by the main switch in the driver console. Dome light globes shall be shatter proof plastic.

Step well, driver, and engine compartment lights shall be specifically designed for each area of function.

3.51 EXTERIOR STREETCAR HEAD LIGHT

A functioning authentic vintage design single headlight assembly shall be mounted in the center of the front grille.

The headlight shall be a minimum of 8" diameter with stand-off design. The headlight shall be made of plated polished brass.

3.52 ENGINE FLUID FILL CENTER

An engine fluid fill center shall be located on the front or the street side of the trolley with exterior access, allowing for ease of maintaining proper fluid levels. This center shall house the water overflow bottle and windshield wiper fluid reservoir.

3.53 ENGINE COMPARTMENT

The engine compartment shall be completely sealed to prevent the intrusion of smoke and fumes to the interior of the trolley.

The engine compartment shall be lined with specialty sound and heat insulation.

The engine compartment and driver's area shall be constructed of a two-piece construction design with the lower half being part of the driver's floor area. Positive engagement latches shall be provided to secure the cover in the closed position.

The engine compartment cover shall be removable, exposing the engine and accessories.

Option

An automatic fire suppression system with 25 lbs. ABC dry chemical shall be provided as an option.

3.54 **DRIVER'S CONSOLE**

The driver's console shall be designed for safety and ease of driver operation.

The driver's console and dash panel shall be constructed with plastic faceplates.

The forward dash console and driver control center shall have a complete complement of instrumentation and controls. Consoles to contain: speedometer with odometer, voltmeter, fuel gauge, and warning lights with buzzer, indicating hot engine, and low oil pressure. Indicator lights shall be provided for high beam and directional light indication. A tachometer shall also be provided.

The left-hand driver's control center shall be made of cabinet grade oak plywood stained to match interior walls or steel painted to match the body with a textured finish to provide a durable switch control panel. Controls for the air conditioning, dome lights, entry door, floor heaters, driver light, center light and electrical panel light shall be located in the left hand control panel.

3.55 **MIRRORS, EXTERIOR**

The trolley shall be equipped with standard West Coast rear view mirrors, one mounted to the left corner post and the other on the right front corner post. The mirrors shall be finished in black. The mirror arms shall be retractable to prevent damage by drive through bus washer brushes. Adjustable arms shall be of adequate length to provide rearward vision.

Both mirrors shall be equipped with a wide-angle lower mirror.

Right front mirror shall be mounted to prevent contact with pedestrians or boarding passengers. The lowest point of the right front mirror shall be a minimum of 80" above street level.

Option

High mount exterior mirrors with heated and remotely adjustable mirror heads on both sides of the trolley shall be provided on both sides of the trolley as an option.

3.56 **MIRROR, INTERIOR**

A 6" x 9" rectangular convex mirror shall be mounted inside the front header and be fully adjustable to view the passenger compartment from the driver's seat.

3.57 PASSENGER SIGNAL SYSTEM

The passenger stop request signal shall be fully ADA compliant.

The stop request signal system shall provide both audible and visual indication to passengers when a stop is requested. An illuminated stop request sign shall be mounted where it is visible to passengers. A light on the driver's console shall also be illuminated to alert the driver.

The passenger stop request signal shall be activated by yellow pull cords on both sides of the trolley. In addition to the upper main pull cords, vertical pull cords shall be located between each window.

The passenger stop request signal shall be accessible to wheelchair passengers occupying the wheelchair securement positions.

A yellow wheelchair stop request touch tape shall be provided at the wheelchair lift.

The standard trolley rope activated interior brass bell signal system will not be required.

3.58 AM/FM RADIO, CD PLAYER AND P.A. SYSTEM

An AM/FM radio/CD system shall be provided

A P.A. system with headset microphone shall be provided. An additional jack and hand held microphone with push to talk feature shall be located on the forward dash. Final location to be determined prior to production.

A wireless axillary microphone shall be provided.

Four (4) flat black covered speakers shall be provided and located above the center aisle.

Digital Clock Display

A digital clock display that shows the Date, Time, and Temperature for passengers' information shall be provided.

3.59 WINDSHIELD WIPERS AND WASHERS

One (1) heavy-duty electric windshield wiper shall be mounted at each windshield in an enclosed compartment with a hinged access door. Wipers shall be individually controlled.

Wiper arms shall be pantograph type with replaceable blades. Nozzles shall be mounted at the end of each wiper arm.

The washer reservoir shall be a minimum three-quart capacity.

3.60 HEATING AND VENTILATION SYSTEMS

The driver HVAC system shall have a minimum capacity of 35,000 BTU and 400 CFM capacity.

3.61 AIR CONDITIONING SYSTEM

The air conditioning system shall have a total capacity of 130,000 BTU minimum.

The air conditioning system shall be furnished with two (2) evaporators located in the front and rear of the trolley or in the center of the trolley one blowing to the rear of the trolley and one blowing to the front of the trolley. If the evaporators are located in the center of the trolley, the hosing and electrical connections shall be housed in 4 x 4 posts structurally tied in with the roof and floor to provide added strength to the cage and mounting location for the air conditioning evaporators.

Operator controls shall be electronic.

Air flow for the driver shall be adjustable. Both front and rear evaporators for the passenger compartment shall be free-blow design. Vents in each evaporator shall be adjustable as to direction and amount of air flow.

Two (2) condensers shall be mounted below the floor behind the removable skirt covers.

The air conditioning system shall be supplied by two (2) 13 cubic-inch compressors that will be belt-driven from the engine.

The system shall be thermostatically controlled; system refrigerant shall be R-134A.

3.62 SEATING

Driver Seat

A mechanical suspension driver's seat shall be provided. Seat shall include up and down, forward and back and seat tilt adjustments. The driver's seat shall include an integral shoulder harness.

Heavy Duty Pneumatic Suspension Driver Seat - Option

A pneumatic suspension driver seat shall be offered as an option. The seat shall be a hi-back recliner with right hand and left hand armrests, 4-way adjustable headrest, 78" top release seatbelt, and black riser. The seat shall have a 400 lb. lifting capacity, anti-rotational scissors suspension, two adjustable shocks, dual locking recliner gears, 3-cell air lumbar support, 9.05" for-aft travel, 6.5" height adjustment, 15-degrees rake adjustment, 12 or 24-degree seat back recline limit, 2" seat cushions thigh extension, reinforced double locking seat tracks, and air track release w/center mechanical release. The seat shall meet FMVSS 302, 207 and 210 and have a 3 year warranty.

Heavy Duty Mechanical Suspension Driver Seat – Option

A mechanical suspension driver seat shall be offered as an option. The seat shall be a hi-back recliner with right hand and left hand molded armrests, and 3-point shoulder and lap belt. The seat shall have a 500 Lb. dead lift capacity and 650 Lb. seat rating, pendulum scissors suspension, dual shocks, adjustable mechanical lumbar support, height adjustment, adjustable seat pan rake, recline adjustment, and 9.45" for-aft travel

Rear-facing tour-guide seat

A rear-facing tour guide seat shall be provided forward of the entry door on the curbside of the trolley. The seat shall not interfere with passenger entrance or egress or impede access to the engine compartment.

Passenger Seats

The trolley shall accommodate 30 seated passengers when the two wheelchair positions are not occupied.

All passenger seating in the trolley shall be of vintage design.

Passenger seats shall be 34-inches in width.

Passenger seats shall be contoured using cast aluminum seat ends with molded design scrollwork.

Seat slats shall be $\frac{3}{4}$ " oak fastened to the seat frames using $\frac{1}{4}$ " brass round head carriage bolts.

A 34" wide wood slat fold-away seat shall be provided at the wheelchair securement area.

3.63 GRAB RAILS AND STANCHIONS

All grab rails and stanchions shall be 1- $\frac{1}{2}$ " O.D. x .050" polished brass tubing. Fittings, rails and stanchion shall be secured at interfaces with mechanical fasteners.

Overhead grab rails shall be provided suspended from the inner edge of the cupola roof section. Grab rail brackets shall be polished cast brass.

Ten (10) leather grab straps shall be provided.

Angled entry handrails shall be provided at the right and left side of the entry door.

3.64 MODESTY PANELS

Modesty panels shall be constructed from .090" aluminum sheet metal and shall be installed in front of the first seat located directly behind the entrance door.

Panels shall be finished in high-gloss, polyurethane enamel.

A clear Plexiglas full height barrier, 30" x 60", shall be provided directly behind the driver.

3.65 STREETCAR BELL

A replica streetcar bell shall be mounted on the front upper portion of the roof and activated by a pull rope adjacent to the driver.

The bell base shall be of cast steel finished in black enamel paint.

Bell diameter shall be 10 inches.

3.66 INTERIOR WOOD TRIM

All wood trim shall be solid grade oak.

All trim shall be attached with appropriate fasteners.

Wood trim shall not support structural loads.

Interior oak advertising sign holders shall be provided.

An 18' x 24" brochure holder shall be provided. The location shall be determined at the pre-production design review meeting.

3.67 SCROLL WORK

The trolley shall have vinyl accent pinstripes on selected panels.

Pin striping shall be ¼" wide.

3.68 BRASS PLATING AND POLISHING

All brass parts shall be over-plated for maximum protection.

All brass parts shall be multi-stage polished.

All brass parts shall be free from scratches at time of delivery.

3.69 NOISE LEVEL

Noise level within the interior compartment shall be approximately 84 dBA at 2500 RPM measured in a stationary position at the driver's seat.

Exterior noise level at 50 feet shall be less than 80 dBA.

3.70 BACK-UP ALARM

A reverse alarm shall be provided.

3.71 SAFETY EQUIPMENT

A five (5) pound, U.L. approved fire extinguisher shall be mounted directly adjacent to the engine compartment located on the curbside of the vehicle.

A 16-unit first aid kit shall be mounted directly adjacent to the fire extinguisher. On the outside of the fire extinguisher there shall be a metal label indicating that the fire extinguisher has been listed and approved by the U.L. and Factory Mutual Laboratories. A sticker with the date the extinguisher was last inspected shall be placed visibly on the unit.

A DOT approved triangle warning kit shall be mounted adjacent to the fire extinguisher. The reflective triangles shall be in compliance with section 316.300, Florida Statutes.

3.72 CCTV SURVEILLANCE SYSTEM

A CCTV surveillance system with network video recorder, 2 TB storage, and 6 high definition IP (1080p) color cameras shall be provided. The system shall support H.264 video compression, wireless downloading, complete metadata collection and retrieval, and up to 12 high definition IP cameras

Pricing for optional additional cameras shall be provided.

3.73 ELECTRONIC DESTINATION SIGN

An LED electronic destination sign system shall be provided. The system shall include Programming Software and USB (at no additional charge). The displays shall be ADA compliant.

The system shall have an OCU with USB port, high intensity LEDs with automatic brightness adjustment and shall operate on 12 VDC.

The Front Sign configuration shall be 14 x 108.

The Side Sign configuration shall be 14 x 72.

Rear Sign – Option

A 14 x 72 rear sign shall be provided as an option.

3.74 FARE BOX (OPTION)

Option

A manual fare box with 2 vaults shall be provided as an option. The farebox shall be constructed of brass and aluminum or stainless steel and aluminum with machined, welded joints with clear viewing windows of either polycarbonate or acrylic. The farebox shall have a 12 volt night light to allow for viewing of inspection plate in low light conditions

3.75 PAINT AND GRAPHICS

Exterior Paint and Graphics

A custom exterior paint (2 colors) and graphics package shall be provided.

Third paint color on roof – Option

A third paint color on the roof shall be provided as an option.

Interior and Exterior Decals

Contractor shall furnish and apply all decals. Final sizes and locations shall be approved by DTPW. Bilingual (English and Spanish) instructions for decals containing identification of emergency egress windows, hatches, etc., shall be provided. Contractor shall provide the list of all decals, including samples or drawings of all listed decals, for MDC approval prior to production.

Interior and exterior decals shall be provided in compliance with the ADA requirements defined in 49 CFR Part 38, Subpart B, 38.27.

A detailed signs and decals description shall be submitted to MDC for review and approval prior to production.

3.76 SPARE KEY SET

One spare key set shall be provided for each trolley.

3.77 MANUALS

The successful bidder shall provide with each trolley, a comprehensive owner's manual which describes the appropriate use of the equipment purchased, and comprehensive repairs and parts manuals which identify the component parts and which describe the appropriate process for repairing the equipment purchased. The repairs manuals shall include electrical schematics specific to the units delivered. These manuals may be provided in the form of books or CD. As an alternative, these manuals may also be provided to the County via online with unlimited access to read and print as needed.

3.78 WARRANTY

Warranties in this document are in addition to any statutory remedies or warranties imposed on the Contractor.

Warranties shall be manufacturer's standard and shall be inclusive of any other warranties provided by the subsystem and component manufacturers and any other warranties which may be stipulated elsewhere herein.

Consistent with this requirement, the Contractor warrants and guarantees to MDC each complete trolley, and specific subsystems and components as follows:

Complete Trolley: A 1-year parts and labor warranty to cover all components and parts on this vehicle, including paint and electrical shall be provided.

Chassis Frame, Engine, and Transmission: Warranty on the chassis, engine, transmission, and equipment supplied with the chassis shall be the responsibility of the chassis manufacturer.

Subcontractor Warranties: With respect to all warranties, expressed or implied, from equipment suppliers, subcontractors, and suppliers of materials furnished under this contract, the Contractor shall:

- 1) Obtain all warranties that would be given in normal commercial practice;
- 2) Require all warranties to be executed, in writing, for the benefit of MDC, if directed by the MDC.
- 3) Enforce all warranties for the benefit of MDC, if directed by MDC.

Subsystems and Components: Specific subsystems and components are warranted and guaranteed to be free from defects and related defects for the time and/or mileages given.

The following parts and labor warranty periods and/or mileage shall apply:

<u>Item</u>	<u>Years</u>	<u>Mileage</u>
Air Conditioning	2	Unlimited
Wheelchair Lift	3	Unlimited